

DEPARTMENT OF HEALTH SERVICES

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May 5, 1998

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MCAS EL TORO
SSIC #5090.3

Mr. Joseph Joyce
BRAC Environmental Coordinator
U.S. Marine Corps Air Station – El Toro
P.O. Box 95001
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Commander:

Attached please find the California Department of Health Services' (DHS) comments on the review of Section 8.0 of the Final Groundwater Monitoring Report October 1997 Sampling Round, Groundwater Monitoring Program for Marine Corps Air Station El Toro. As an Agreement State with U.S. Nuclear Regulatory Commission DHS has the charge of protecting the citizens of California from undue exposure to radiation. DHS provides consultative guidance to the California Department of Toxic Substances Control on radiological matters and reviewed this document at their request.

If you have any questions or need further information regarding this review, please contact Ms Deirdre Dement at (916) 324-1378.

Sincerely,

A handwritten signature in cursive script that reads "Darice G. Bailey".

Darice G. Bailey
Senior Health Physicist
Division of Drinking Water and Environmental Management

Enclosure

cc: Mr. Tayseer Mahmond
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Mr. Joseph Joyce

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bcc: Edgar D. Bailey, Chief
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Department of Health Services

Review of Section 8.0 of the *Final Groundwater Monitoring Report October 1997 Sampling Round, Groundwater Monitoring Program for Marine Corps Air Station El Toro, California, March 2, 1997*

April 30, 1998

DTSC Resource Planning Form # 381

The following comments and questions are in response to the request from Mr. Tayseer Mahmoud of the Department of Toxic Substances Control to review Section 8.0 of the groundwater monitoring report from the October 1997 sampling round conducted at the Marine Corps Air Station in El Toro, California.

General Comments:

1. It is unclear from the text the purpose of the sampling and analysis for radionuclides in groundwater; this may have been stated in earlier documents which DHS has not had access to. In order for DHS to properly evaluate this facility for its release for unrestricted use, any information regarding historical references to the potential use or existence of radionuclides at this facility and any other sampling and analysis plans or reports regarding the evaluation, potential presence and/or identity of radionuclides should be made available for review. Because of DHS' limited understanding of this site and its history, the elevated gross alpha results, which do not appear to be related to the Ra-226 results, have not been adequately explained and could be related to other alpha emitters, which may or may not have resulted from site activities.
2. All results for radioanalysis should include the 2 sigma (σ) error associated with the 95% confidence level for each result. These are usually shown next to the value as $\pm 2\sigma$ pCi/L. Without this information, you cannot know what the quality of the data is, or whether the data ranges overlap. These values were provided for the samples collected during October 1997, but were not included in Table 8-3 where data from earlier sampling rounds are provided for comparison.

Specific Comments:

1. Section 8.3, Page 8-2, Gross Alpha/Gross Beta. An adequate explanation of the elevated gross alpha results has not been provided. These results are most likely from naturally occurring uranium found in the soil, but this must be supported with documentation. Without any supporting documentation to say otherwise, DHS would have to assume that radiological wastes (e.g., radium dials, etc.) were likely disposed of in the landfills at El Toro. This disposal could lead to future contamination of the groundwater. DHS would not expect to find radiological contamination from these landfills in groundwater at ~100 feet below ground surface

Specific Comments: (Continued)

1. (Continued.) at this time, although if unknown pathways exist, migration of radiological contamination could be hastened therefore monitoring into the future would be required. Also, because of the migratory characteristics and long half-lives of potential radiological contaminants (i.e., Ra-226 has a half-life of ~1600 years) monitoring the groundwater for 50 years may not be a long enough time period to confirm that groundwater won't be affected from radiological contamination.
2. Section 8.3, Page 8-2, Selected Radionuclides. Please explain why the "Selected Radionuclide," cesium-134, was chosen for radioanalysis. It seems unusual to analyze for Cs-134 and not Cs-137. Cs-134 has a half-life of approximately 2 years, is an activation product of nuclear reactors and would normally be found with Cs-137 and other activation products. Since Cs-137 has a much longer half-life (~30 years), it would be much more likely to detect Cs-137 rather than Cs-134. The choice of Cs-134 also implies the need to look for activation products from nuclear reactors. A historical review of this site could eliminate a need to look for radionuclides not associated with this site. Cs-137 has been associated with wastewater from the decontamination of military airplanes that flew through atomic test areas.